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REMARKS

Claims 1-27 are currently pending in the subject application and are presently under consideration. Claims 1, 11, 21, and 27 have been amended herein. A listing of all pending claims is found at pages 2-7 of this Reply.

Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

I. Rejection of Claims 1-27 Under 35 U.S.C. § 103(a)

Claims 1-27 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Marshall *et al.* (U.S. 5,685,398) in view of McCarthy (U.S. 4,181,201), and further in view of Hodgson (U.S. 2,700,439). Withdrawal of this rejection is respectfully requested for at least the following reasons. Neither Marshall *et al.* nor McCarthy nor Hodgson, alone or in combination, teach or suggest each and every limitation set forth in the subject claims.

To reject claims in an application under §103, an examiner must establish a *prima facie* case of obviousness. A *prima facie* case of obviousness is established by a showing of three basic criteria. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) *must teach or suggest all the claim limitations*. See MPEP §706.02(j). The *teaching or suggestion to make the claimed combination* and the reasonable expectation of success *must both be found in the prior art and not based on applicant's disclosure*. See *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) (emphasis added).

The present invention relates generally to brake motors and in particular to systems and methods of using a manual brake release mechanism. Independent claim 1 has been amended herein to recite "...a manual brake release, comprising: a field cup adapted to support an electromagnetic coil; an armature plate coupled to the field cup; a stationary plate coupled to the armature plate; a friction disk disposed between the armature plate and the stationary plate; a compression spring disposed between the field cup and the armature plate, the compression spring being operable to hold the armature plate and the friction disk against

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the stationary plate; and a lever and cam assembly that comprises a cam mounted on a lever, coupled to the armature plate and the field cup, *the cam abuts the field cup and is rotatable to push the cam and lever assembly off of an interior flat annular surface of the field cup* to separate the armature plate from the friction disk." Independent claims 11, 21, and 27 have been amended to recite similar features to those of claim 1. The claimed invention mounts a rotary cam to a lever (See Figure 5), which then *directly acts upon the armature plate and field cup to which it is coupled*. Turning the camshaft results in movement of the cam and the top portion of the lever toward the friction disk, which in turn forces the bottom portion of the lever to move in an opposite direction, away from the friction disk. The cam itself is mounted on the lever (see, e.g., Figure 5), so that when the handle is turned, *the entire lever/cam assembly is tilted* (see, e.g., Figures 6 and 7) as the cam pushes off of a flat annular portion 420 of the field cup (see, e.g., Figure 2). Because the bottom portion of the lever is directly attached to the armature plate/field cup assembly, the armature plate and field cup are also pulled away from the friction disk, permitting free rotation of the friction disk and the axis to which it is attached. Neither Marshall *et al.* nor McCarthy nor Hodgson, alone or in combination, teach or suggest such aspects of applicants' claimed invention.

Marshall *et al.* describes an *externally mounted lever*, which, when moved in either a forward *or* rearward direction, *disengages* an armature from a friction disc. Marshall *et al.* does not teach the lever/cam assembly of the present invention. The Examiner relies on McCarthy to introduce the cam portion of a lever/cam assembly.

McCarthy fails to overcome the deficiencies of Marshall *et al.* with respect to the subject claims. The McCarthy structure involves a cam engaging latch arm 88 coupled to a handle 92. To manually release the brake, the handle must be turned 90°, such that the latch arm 88 engages with a U-shaped cam portion 64 and pivots the cam portion 64 and a supporting lever 24 to release a brake shoe 46 from a frictional braking engagement with a brake disc 16. *The cam engaging latch arm 88 and handle 92 assembly is a separate structure from the cam portion 64 and the supporting lever 24*, as shown in Fig. 1 of McCarthy. Neither the cam engaging latch arm 88, the cam portion 64, nor the supporting lever 24 is coupled to an armature plate or a field cup. Combining the cam-engaging latch arm 88 and handle 92 assembly to the lever of Marshall *et al.* would merely result in a cam-engaging latch arm that pushes a lever, and not in a *cam/lever assembly wherein the cam pushes itself and the lever away from a field cup when turned*.

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In fact, neither Marshall *et al.* nor McCarthy, alone or in combination, discloses such a field cup 240 oriented and positioned to provide a surface 420 against which the cam-engaging latch arm 88 of McCarthy could push to effectuate movement of itself and a lever, let alone a *cam mounted directly on a lever*.

Hodgson fails to overcome the deficiencies of Marshall *et al.* and McCarthy with respect to the subject claims. The Examiner cites Hodgson to introduce the aspect of a cam assembly that pushes away from a fixed element. However, the "fixed element" off of which the Hodgson lever pushes is not an interior flat annular surface of a field cup, as set forth in the amended independent claims, but rather an exterior end of a housing. Moreover, the Examiner contends that Hodgson teaches a "cam assembly," and cites *In re Gazda*, 219 F.2d449, 104 USPQ 400 (CCPA 1955) as supporting a "reversal of parts" argument, which suggests that Hodgson teaches a lever that can be manipulated to cause a cam assembled therewith to separate an armature plate from a friction disk. However, the Hodgson apparatus is merely a lever with a partially rounded end affixed about a pin that functions as a fulcrum, which in turn permits the lever to pry a bar away from the exterior of the housing when manipulated. Reversal of such parts of the Hodgson device would not result in the claimed cam-and-lever assembly. Moreover, "obvious expedient" findings for reversal of operation of parts must be based on obviousness and not merely on a "mechanical rule." *See, e.g., In re Wright*, 343 F.2d 761, 769-770, 145 USPQ 182, 190 (CCPA 1965).

Still furthermore, modifying Hodgson as suggested by the Examiner would render the reference inoperable for its intended purpose. Hodgson is directed toward providing "an electromagnetic brake... having a *manual releasing mechanism which is automatically rendered ineffective upon energization of the magnetic coil.*" (Column 1, lines 53-56.) "In order to render the manual releasing mechanism ineffective in the event that the motor and brake are reenergized, *the brake shown in the drawings must be mounted on the end housing of the motor so that the operating lever 57 as shown in the solid line position is pointing downwardly.* It thus becomes apparent that whenever the magnet coil 39 is energized so as to move the lamination set 33 toward set 29 *said operating lever 57 must necessarily fall into the solid line position due to the gravitational effect thereon.*" (Column 3, lines 48-57.) Thus, modifying the Hodgson lever in any manner from its described orientation would render Hodgson unsatisfactory

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for its intended purpose and change the principle of operation thereof (e.g., employing gravitational force to return the lever to its ineffective position), and one of ordinary skill in the art would not have a reasonable expectation of success to apply such modifications. *See, e.g.*, MPEP 2143.01. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

In order to establish a *prima facie* case of obviousness, the teaching or suggestion to make the claim modification *must be found in the cited art*, not based on the applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Furthermore, the mere fact that the reference can be modified does not render the modification obvious *unless the cited art also suggests the desirability of the modification*. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

Combining the references in the manner suggested by the Examiner would not result in the invention as claimed. The combination of the handle 92, cam-engaging latch arm 88, and cam 60 of McCarthy and the externally mounted handle 312 of Marshall *et al.* would result in a structure that, when the handle is manipulated, would turn the cam engaging latch arm, which would in turn push the lever. This is very different from the single-cam-internal-lever assembly of the claimed invention, *which is a unit* (e.g., the lever passes through the center of the cam). Furthermore, because the cam and lever assembly is a unit, the cam of the present invention does not push on the lever to effectuate release of a brake, but rather actuation of the cam causes the cam portion of the cam/lever assembly to push the cam/lever assembly away from a separate structure, a flat annular surface 420 of the field cup 240, which results in movement of the cam/lever assembly unit to effectuate separation of the armature plate from the friction disk. Moreover, the lever/fulcrum of Hodgson cannot be combined with Marshall *et al.* and/or McCarthy as suggested by the Examiner because Hodgson does not teach the claimed lever-and-cam assembly, regardless of whether the operation of the parts of Hodgson are reversed, and for the reasons stated above with respect to rendering Hodgson inoperable for its intended purpose.

In view of at least the above, it is readily apparent that the combination of Marshall *et al.*, McCarthy, and Hodgson does not make obvious the present invention as set forth in independent claims 1, 11, 21, and 27 (and claims 2-10, 12-20, and 22-26, which depend

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respectively there from). Therefore, this rejection should be withdrawn.

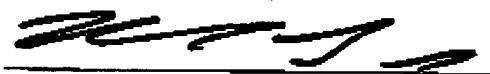
CONCLUSION

The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063.

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,
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